



SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: KOZLOV, VLADIMIR  
TSYRLOVA, IRENA
- (ii) TITLE OF INVENTION: INHIBITOR OF STEM CELL PROLIFERATION AND  
USES THEREOF
- (iii) NUMBER OF SEQUENCES: 11
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: NIXON & VANDERHYE P.C.
  - (B) STREET: 1100 NORTH GLEBE ROAD, 8th FLOOR
  - (C) CITY: ARLINGTON
  - (D) STATE: VIRGINIA
  - (E) COUNTRY: U.S.A.
  - (F) ZIP: 22201-4714
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: 1.44 Mb diskette
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: MS Word
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 09/839,164
  - (B) FILING DATE: 23-APR-2001
  - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08,477,668
  - (B) FILING DATE: 07-JUN-1995
- (viii) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08,316,424
  - (B) FILING DATE: 30-SEP-1994
- (ix) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: PCT/US94/03349
  - (B) FILING DATE: 29-MAR-1994
- (x) PRIOR APPLICATION DATA:
  - (A) APPLICATION NUMBER: US 08/040,942
  - (B) FILING DATE: 31-MAR-1993

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 423 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (cDNA)
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GTGCTGTCTC CTGCCGACAA GACCAACGTC AAGGCCGCGCT GGGTAAGGT CGGCGCGCAC 60  
 GCTGGCGAGT ATGGTGCGGA GGGCCTGGAG AGGATGTTCC TGTCTTCCC CACCACCAAG 120  
 ACCTACTTCC CGCACTTCGA CCTGAGCCAC GGCTCTGCCC AGGTTAAGGG CCACGGCAAG 180  
 AAGGTGGCGG ACGCGCTGAC CAACGCCGTG GCGCACGTGG ACGACATGCC CAACGGCGTG 240  
 TCCGCCCTGA GCGACCTGCA CGCGCACAAG CTTCGGGTGG ACCCGGTCAA CTTCAAGCTC 300  
 CTAAGCCACT GCCTGTGCTG GACCTTGGCC GCCCACCTCC CCGCCGAGFT CACCCCTGCG 360  
 GTGCACGCCCT CCTGGACAA GTTCTTGGCT TCTGTGAGCA CCGTGTGAC CTCCAAATAC 420  
 CGT 423

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 141 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Val	Leu	Ser	Pro	Ala	Asp	Lys	Thr	Asn	Val	Lys	Ala	Ala	Trp	Gly	Lys	1	5	10	15
Val	Gly	Ala	His	Ala	Gly	Glu	Tyr	Gly	Ala	Glu	Ala	Leu	Glu	Arg	Met	20	25	30	
Phe	Leu	Ser	Phe	Pro	Thr	Thr	Lys	Thr	Tyr	Phe	Pro	His	Phe	Asp	Leu	35	40	45	
Ser	His	Gly	Ser	Ala	Gln	Val	Lys	Gly	His	Gly	Lys	Lys	Val	Ala	Asp	50	55	60	
Ala	Leu	Thr	Asn	Ala	Val	Ala	His	Val	Asp	Asp	Met	Pro	Asn	Ala	Leu	65	70	75	80
Ser	Ala	Leu	Ser	Asp	Leu	His	Ala	His	Lys	Leu	Arg	Val	Asp	Pro	Val	85	90	95	
Asn	Phe	Lys	Leu	Leu	Ser	His	Cys	Leu	Leu	Val	Thr	Leu	Ala	Ala	His	100	105	110	
Leu	Pro	Ala	Glu	Phe	Thr	Pro	Ala	Val	His	Ala	Ser	Leu	Asp	Lys	Phe	115	120		
Leu	Ala	Ser	Val	Ser	Thr	Val	Leu	Thr	Ser	Lys	Tyr	Arg	130	135	140				

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 438 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (cDNA)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GTGCACCTGA CTCCTGAGGA GAAGTCTGCC GTTACTGCCC TGTGGGGCAA GGTGAACGTG	60
GATGAAGTTG TGGGTGAGGC CCTGGGCAGG CTGCTGGTGG TCTACCTTTG GACCCAGAGG	120
TTCTTTGAGT CTTTTGGGGA TCIGTCCACT CCTGATGCTG TTATGGGGCAA CCCTAAGGTG	180
AAGGCTCATG GCAAGAAAGT GCTCGGTGCC TTTAGTGATG GCCTGGCTCA CCTGGACAAC	240
CTCAAGGGCA CTTTGGCCAC ACTGAGTGAG CTGCACTGTG ACAAGCTGCA CGTGGTCTCT	300
GAGAAGTTCA GGCTGTCTGG CAACGTGCTG GTCTGTGTGC TGGCCCATCA CTTTGGCAAA	360
GAATTCACCC CACCAGTGCA GGCTGCCTAT CAGAAAGTGG TGGCTGGTGT GGCTAATGCC	420
CTGGCCACAC AGTATCAC	438

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 146 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Val His Leu Thr Pro Glu Glu Lys Ser Ala Val Thr Ala Leu Trp Gly	1 5 10 15
Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu	20 25 30
Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu	35 40 45
Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly	50 55 60
Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp Asn	65 70 75 80
Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys Leu	85 90 95
His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val Cys	100 105 110

Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln Ala  
 115 120 125

Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys  
 130 135 140

Tyr His  
 145

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 141 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Val Leu Ser Gly Glu Asp Lys Ser Asn Ile Lys Ala Ala Trp Gly Lys  
 1 5 10 15

Ile Gly Gly His Gly Ala Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met  
 20 25 30

Phe Ala Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Val  
 35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala Asp  
 50 55 60

Ala Leu Ala Ser Ala Ala Gly His Leu Asp Asp Leu Pro Gly Ala Leu  
 65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val  
 85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ser His  
 100 105 110

His Pro Ala Asp Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe  
 115 120 125

Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg  
 130 135 140

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 146 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

```

Val His Leu Thr Asp Ala Glu Lys Ala Ala Val Ser Cys Leu Trp Gly
 1          5          10          15
Lys Val Asn Ser Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu
          20          25          30
Val Val Tyr Pro Trp Thr Gln Arg Tyr Phe Asp Ser Phe Gly Asp Leu
          35          40          45
Ser Ser Ala Ser Ala Ile Met Gly Asn Ala Lys Val Lys Ala His Gly
          50          55          60
Lys Lys Val Ile Thr Ala Phe Asn Asp Gly Leu Asn His Leu Asp Ser
        65          70          75          80
Leu Lys Gly Thr Phe Ala Ser Leu Ser Glu Leu His Cys Asp Lys Leu
          85          90          95
His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Met Ile Val Ile
          100          105          110
Val Leu Gly His His Leu Gly Lys Asp Phe Thr Pro Ala Ala Gln Ala
          115          120          125
Ala Phe Gln Lys Val Val Ala Gly Val Ala Thr Ala Leu Ala His Lys
          130          135          140
Tyr His
145

```

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 141 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```

Val Leu Ser Ala Ala Asp Lys Ala Asn Val Lys Ala Ala Trp Gly Lys
 1          5          10          15
Val Gly Gly Gln Ala Gly Ala His Gly Ala Glu Ala Leu Glu Arg Met
          20          25          30
Phe Leu Gly Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asn Leu
          35          40          45
Ser His Gly Ser Asp Gln Val Lys Ala His Gly Gln Lys Val Ala Asp
          50          55          60
Ala Leu Thr Lys Ala Val Gly His Leu Asp Asp Leu Pro Gly Ala Leu
        65          70          75          80

```

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val  
85 90 95  
Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala His  
100 105 110  
His Pro Asp Asp Phe Asn Pro Ser Val His Ala Ser Leu Asp Lys Phe  
115 120 125  
Leu Ala Asn Val Ser Thr Val Leu Thr Ser Lys Tyr Arg  
130 135 140

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 146 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Val His Leu Ser Ala Glu Glu Lys Glu Ala Val Leu Gly Leu Trp Gly  
1 5 10 15  
Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu  
20 25 30  
Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu  
35 40 45  
Ser Asn Ala Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His Gly  
50 55 60  
Lys Lys Val Leu Gln Ser Phe Ser Asp Gly Leu Lys His Leu Asp Asn  
65 70 75 80  
Leu Lys Gly Thr Phe Ala Lys Leu Ser Glu Leu His Cys Asp Gln Leu  
85 90 95  
His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Ile Val Val  
100 105 110  
Val Leu Ala Arg Arg Leu Gly His Asp Phe Asn Pro Asp Val Gln Ala  
115 120 125  
Ala Phe Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Lys  
130 135 140  
Tyr His  
145

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 23 amino acids
  - (B) TYPE: amino acid

(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Val His Leu Ser Ala Glu Glu Lys Glu Ala Val Leu Gly Leu Trp Gly  
1 5 10 15  
Lys Val Asn Val Asp Glu Val  
20

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Val Leu Ser Ala Ala Asp Lys Ala Asn Val Lys Ala Ala Trp Gly Lys  
1 5 10 15  
Val Gly Gly Gln  
20

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Phe Pro His Phe Asn Leu Ser His Gly Ser Asp Gln Val Lys  
1 5 10